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Validity and Reliability Findings of Personal Globe Inventory Short Form Turkish

Kişisel Küre Envanteri Kısa Formu Türkçenin Geçerlik ve Güvenirlik Bulguları

Ragıp Özyürek, Bade Vardarlı, Terence J. G. Tracey

Yazar Bilgileri

Ragıp Özyürek
Prof. Dr., İstanbul Aydın Üniversitesi, İstanbul, Türkiye
r.ozyurek@gmail.com

Bade Vardarlı
Dr., VR Çocuk Bilişim Teknoloji ve Danışmanlık, İzmir, Türkiye
badevardarli@hotmail.com

Terence J. G. Tracey
Prof. Dr., British Columbia Üniversitesi, Vancouver, Canada
Terence.Tracey@ubc.ca

ABSTRACT

The aim of this study is to reveal the findings of the national standardization study of the Personal Globe Inventory-Short Form Turkish (PGI-S-TR). PGI-S-TR consists of eight basic interests and 40 items including low and high prestige scales. Within the adaptation study, PGI-S-TR was applied to 4699 students. In the study, (a) whether the global model is compatible with the database, (b) whether the scale scores differ according to sex and education levels (high school and university), (c) the relationship between personality measurements and the measurements of the Hexagon Model (Holland, 1997) and (d) how the three-letter coding according to high school and higher education programs was examined. The findings were discussed in the light of the findings of previous studies and the results and recommendations were given. As a result, it has been determined that it would be beneficial to use PGI-S-TR.

ÖZET

Bu çalışmanın amacı Kişisel Küre Envanteri-Kısa Form Türkçe'nin (KKE-K-TR) ulusal standardizasyon çalışmalarını gerçekleştirmektir. KKE-K-TR sekiz temel ilgi ile düşük ve yüksek saygınlık ölçekleri için hazırlanan 40 maddeden oluşmaktadır. Uyarlama çalışması ile toplam 4699 öğrenciye ölçek uygulaması yapılmıştır. Araştırmada, (a) küresel modelin veri tabanına uygunluk gösterip göstermediği, (b)ölçek puanlarının cinsiyet ve eğitim düzeylerine (lise ve üniversite) göre farklılık gösterip göstermediği, (c) kişilik ölçümleri ile Altıgen Modele (Holland, 1997) uygun ölçümlerin nasıl bir ilişki gösterdiği ve (ç) lise ve yüksek öğretim programlarına gore üç harfli kodlamaların nasıl olduğu incelenmiştir. Elde edilen bulgular, ilgili araştırmaların bulguları ışığında tartışılmış, sonuç ve önerilere yer verilmiştir. Sonuç olarak, KKE-K-TR'nin kullanılmasının yararlı olacağı belirlenmiştir.

Etik Bildirim: Bu çalışmada bilimsel araştırma etik kurallarına uyulmuştur.

INTRODUCTION

Considering the time we spend working, it is seen that the choice of profession is one of the most important decisions affecting the life of the individual. While making this important decision, it is important to reveal the vocational interests of the individual and direct them to professions that are compatible with their interests. For this purpose, the necessity of developing valid, reliable and practical measurement tools come to the fore (Holland, 1997; Tracey 2002). The manual in Turkey has not been revised and validity studies of some of the known interest inventories and validity studies were carried out made based on the samples selected from certain provinces (Özyürek, 2016).

The Personal Globe Inventory - Short (PGI-S) developed by Tracey (2010), and the Turkish version have been adapted by Vardarlı (2014). In this paper, application of the Personal Globe Inventory – Short – Turkish (PGI-S-TR) to the high school and university students, the validity and reliability results were discussed. In order to understand the spherical model which was measured by PGI, it is necessary to understand Prediger's model (1981) and Holland's hexagonal model (1997).

Holland's Hexagonal Model and Prediger's Model

Holland's hexagonal model has been effective for the past three decades (Holland, 1997). According to Holland's theory, choosing a profession is an expression of personality and is classified according to six personality types. Accordingly, the same or similar occupational groups have similar characteristics. Holland's six personality types are: Realistic, Investigative, Artistic, Social, Entreprising and Conventional types. The abbreviation of these personality types is RIASEC. Holland (1997) found that the model has a hexagonal structure by examining the relationship between six RIASEC types. Hexagonal types that are close to each other are types with high similarity (Armstrong, Deng, & Rounds, 2007, Holland, 1997).Prediger (1981), revealed a two-dimensional structure for work tasks. The two dimensions of Prediger are Data / Idea and People / Things dimensions, which include tasks with opposite features. Prediger's two dimensions are in relation to Holland's model. For example, individuals with the Realistic personality type mostly have job duties that require working with objects, while individuals with the Social personality type mostly do the jobs they work with people. Figure 1 shows the relationship of these two models.
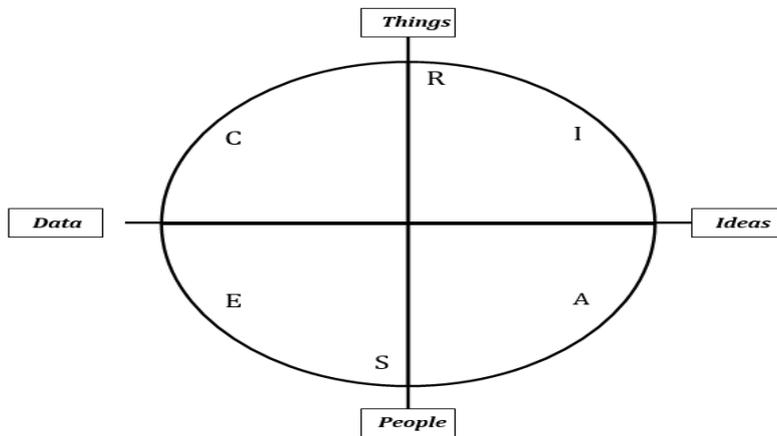

Figure 1. The Relationship of Prediger'sTwo Dimensions (1982) and Holland's Model (1997) (Tracey, 2002)

Tracey's Spherical Model

In their meta-analysis study, Rounds and Tracey (1995) revealed that Holland's Hexagonal Model was not representative enough for both non-US samples and ethnic minorities in America. Tracey and Rounds (1996) developed a model with eight types by expanding the six personality types of Holland in their studies. PGI (Tracey, 2002) is an extension of Holland's model. Developed with the aim of presenting vocational interests in a simpler and more complete way, PGI classifies vocational interests in eight basic interest levels instead of six. The eight main interests identified by PGI are: Social Facilitating, Managing, Business Detail, Mechanical, Nature / Outdoor, Artistic and Helping.

Özyürek (2016) stated the relationship between six personality types and eight basic interests. According to this, the Realistic and Investigative personality types in Holland's model with Mechanical and Nature / Outdoor interests in the global model; Artistic and Social personality types in Holland's model with the Artistic and Helping interests in the global model; He notes that Holland's Entreprising personality type is represented by the Managing and Social Facilitating interests in the global model, and finally, Holland's Conventional personality type is represented in the global model by Business Detail and Data Processing interests. In Figure 2, Eight Basic Interests Level of PGI, the relationship between Holland's six RIASEC types and Prediger's two basic dimensions are shown.
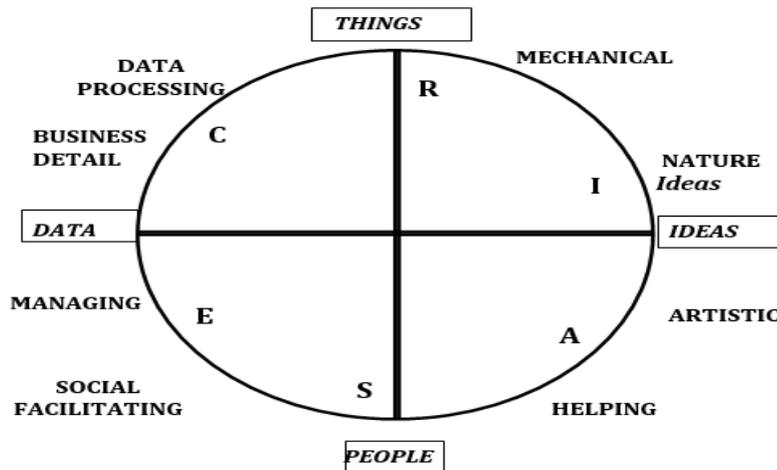

Figure 2. Graphical Representation of Holland'sSix RIASEC Types, Prediger'sTwo Basic Dimensions and Eight Basic Areas of Interest (Tracey, 2002).

PGI suggests that professional interests should be handled in a three-dimensional structure by adding the Prestige dimension to professional interests (Tracey, 2002). In the field of vocational psychology and career counseling prestige is related to status, professional level, education level, and socio-economic level (Gottfredson, 1996: cited in Tracey & Walker, 2012). The prestige factor stands out as the most appropriate factor people use when evaluating different professions (Sodano & Tracey, 2008). It is associated with willingness to the profession and cultural approval of the profession (Tracey, 2002; Tracey & Walker, 2012). The Prestige dimension in the three-dimensional structure of the PGI is located

at the north and south poles. In the North Pole there are five highly respected interests (basic sciences, social sciences, financial analysis, business systems, and respectable impressions) and five low-esteem interests in the South Pole (construction repair, personal services, social services, quality control, and manual work). Figure 3 shows a total of 18 occupational interest types on the global structure surface.
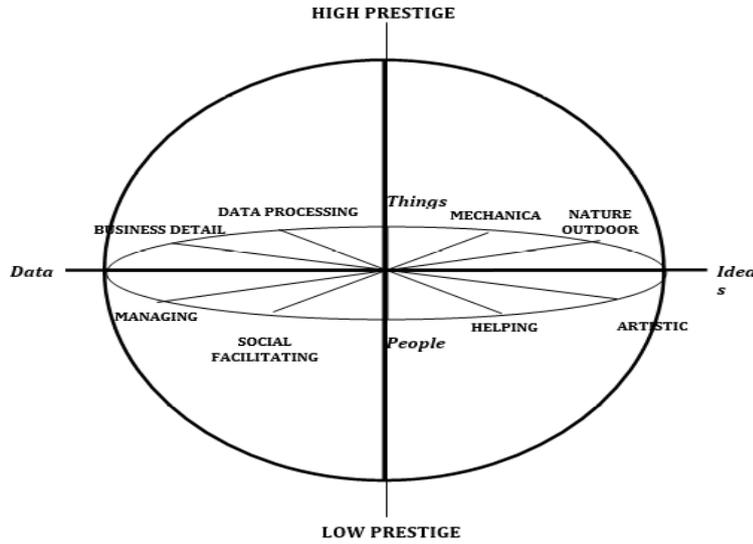

Figure 3. Presentation of Interests on the Sphere (Özütürk, 2005; Tracey, 2002).

Development of PGI

Considering the studies conducted to develop the global structure, it is seen that the Vocational Choice Inventory (VCI) and the Preference Inventory (PI) were developed by Tracey and Rounds (1996) in order to measure the global structure. Tracey (1997) measured the global structure obtained with two different scale types based on the scoring of the activity items used in terms of preference and competence expectation. Item types are explained using multidimensional scaling, factor analysis and principal component analysis. During the analyzes, the best six items were selected to measure each type of interest (Tracey & Rounds,1996). Thus, PGI was developed with a total of 18 subscales consisting of eight main interests, five high-esteem interests, and five low-esteem interests. As a result of taking the geometric mean of 18 subscales, the results for comparing RIASEC scores, people, things, data, idea scores and people / things, data / idea dimensions are obtained. Strong validity and reliability scores for PGI were obtained, and it was revealed that PGI gave results overlapping with similar interest scales (Tracey, 2002).

The validity and reliability studies of the global model have also been tested in some international samples: The model is supported the studies conducted in high school and university in China (Zhang, Kube, Wang & Tracey, 2013)and Croatia (Sverko, 2007), high school in Ireland (Darcy, 2005) and Singapur (Caulum, Tracey, Gresham, & McCarthy, 2011), university in Japan (Long, Watanebe & Tracey, 2006), the Caribbean (Wilkins, Ramkinssoon& Tracey, 2013), Germany (Etzel, Nagy, & Tracey 2016, Etzel & Nagy, 2019) in Switzerland and Burkina Faso with university students and staff (Atitsogbe et al., 2018). In Serbia, on the other hand, supportive findings were obtained in the sample of adults (Hedrih, 2008). Zang et al. (2013) found strong support for the reliability and structure of PGI-S. Similarly,

contruct validity of PGI supported in German collage students sample (Etzel, Nagy & Tracey, 2016). Another study which was conducted in Germany, showed that the Prestige dimension of PGI-S was not significantly represented (Etzel & Nagy, 2019). The findings of the study which was implemented both in Switzerland and Burkina Faso provided strong support for the structural validity and cross-cultural replicability of PGI (Atitsgobe et al., 2018).

Development of PGI-S

Tracey (2010) developed the short version of PGI in order to make it more practical to use. Unlike PGI, there are no Low Prestige and High Prestige areas of interest in the short form. The Short Form of the Personal Globe Inventory (PGI-S) consists of a total of ten subscales, 8 of which are basic interests and low-prestige-high prestige. Another difference is that each subscale of PGI consists of six items while each subscale of PGI-S consists of four items. PGI-S, which consists of 40 items in total, also gives results according to Holland's RIASEC types.

It is seen that various validity and reliability studies were conducted the PGI-S. For example, Zang, Kube, Wang, and Tracey (2013) found a strong support for the global structure in their validity and reliability studies with high school and university students in China. Vardarlı (2014; Vardarlı, Özyürek, Wilkins-Yel, & Tracey, 2017) revealed that PGI-S reflects the global structure in a study conducted with high school and university students in İzmir province. In the study conducted with high school and university students in the Netherlands, the correlations of personal measurements of professional interests measured by PGI-S and the measurements taken from the participants' families were examined (Holtrop, Born, Vries, 2018). Etzel and Nagy (2019) evaluated PGI and PGI-S in terms of their power to reveal the global structure in their research they conducted with university students in Germany. As can be seen, there are studies conducted in different cultures regarding that PGI-S supports the global structure of professional interests. However, more research is needed to demonstrate the structural validity of PGI-S in ethnic and international samples. Such a review is considered important in that the models produced in one sample can reveal different underlying meanings and structures when applied to another sample (Tracey & Gupta, 2008).

When we look at the research on the global structure of interest in Turkey, it is seen that Personal Trends Inventory was created by İnan (2006) which was based on a global model. Vardarlı (2014) conducted a study of creating the Turkish form of PGI-S and testing its validity and reliability. Personal Globe Inventory - Short Form Turkish (PGI-S-TR) (Tracey, 2010; Vardarlı, 2014; Vardarlı et al., 2017) consists of 10 scales, including eight basic interests and low and high esteem scales, and 40 items. PGI-S-TR was applied to high school and university students in Izmir after the original scale items of PGI-S (Vardarlı, 2014; Vardarlı et al., 2017) were adapted to Turkish. Using the randomization test and the data obtained from the Izmir sample, eight basic interest and competence scales were tested whether they fit the global model and it was concluded that the measurements fit well with the global model. Similar tests were validated by examining the correlations between the Perceived Ability and Basic Interest subscales of the Self-Assessment Inventory (Kuzgun, 1990) and the subscales of the PGI-S-TR, and similar subscales of both measurement tools have generally found to have moderately high correlation values with each other. The criterion-related validity was tested by examining whether the scores obtained from the PGI-S-TR subscales showed significant differences according to the type of high school, faculty and gender, and significant differences were found in the expected direction (Vardarlı, 2014). As a result of

the validity and reliability studies, it was concluded that the obtained findings support the reliability and validity of the PGI-S-TR.

In Vardarlı's study (2014) the fit of spherical model into Turkish participants was tested. The sample of the study included participants from İzmir. A new study was needed which involves participants from seven regions of Turkey. For this reason, in this study, additional validity and reliability studies of PGI-S-TR were made. In terms of reliability, internal consistency and temporal stability (equal forms correlations) values were determined. In terms of validity, (a) whether the global structure of the PGI-S-TR is compatible with the sample data (b) within the scope of similar tests validity, the relationships with the Ten-Item Personality Scale (Atak, 2013; Gosling, Rentfrow, & Swann, 2003), (c) to determine that there are significant differences between scale arithmetic averages according to gender and education levels (high school and university); and(d) in order to expand the criterion-related validity findings and make it easier for students to benefit from PGI-S-TR scores, it was aimed to determine the three letter codes of high school and university students. Since the national standardization study of PGI-S-TR was also carried out in the study (such as determining T scores), it was a matter of gaining a new interest inventory for Turkish.

METHOD

Participants

More detailed information about the participants can be found in Özyürek and Vardarlı (2020). In this handbook the same sample was used and elaboratively defined.

Convenience sample method was used in the study. The sample consisted of 1932 high school students (F = *1189*, M = *733*, 10 students did not specify their sex), 2767 university students (F = *1619*, M = *1108*, 40 students did not specify their sex). Mean age and standard deviations of the high school sample are M = *16.74*, Sd = 1.11 (range, 14-21), for the university sample M = *21.95*, Sd = 2.18 (range, 17-45).

Implementations are made in the seven regions in Turkey. Instruments were applied in four types of high schools in 14 cities (Anatolian, vocational and technical Anatolian, science and project school) for high school students. Additionally, in 21 cities, 29 universities, 32 faculties, 1 vocational school and 109 departments for university students instruments were applied. In vocational and technical Anatolian high schools; Students from departments or fields such as electricity, machine technology, motor vehicles, information technologies, computer department web design, art and design, fine arts, child development, accounting computerized accounting are among the participants. Anatolian high school students (n = 1304; 64.50%) and students who chose the science-mathematics score type (n = 1047; 54.98%) make up the majority of the high school sample. The rate of students who chose Turkish-mathematics (n = 486; 25.21%), Turkish-social (verbal) (n = 170; 8.82%) and foreign language (n = 88; 4.56%) fields among other score types is relatively low. The ratio of high school students who think that "I do not intend to take the exam" (n = 49; 2.54%) is not very high. Considering the regions, high school students were mostly chosen from Central Anatolia region (n = 370; 19.19%), while university students were mostly chosen from universities in the Marmara region (n = 717; 25.91).

Instruments

Demoghraphic Questionairre. In this form, personal information of high school and university students was asked. Common questions are sex, age, class levels. Also for high school students; the province where

the school is located, the types of high schools, the area of vocational and technical high school, and according to which school types they prepare for the university entrance exams were asked. There are also specific questions for university students which are university name, faculty / conservatory / college name and department name.

Personal Globe Inventory - Short Form - Turkish (PGI-S-TR). This form is a Turkish version of the original Personal Global Inventory-Short (Tracey, 2010). Each of the 10 subscales, eight main areas of interest, low and high pregtige, are measured with four items each. The inventory consists of 40 items in total and each item is scored separately according to competence expectation and activity preference. While answering the inventory, each item is scored twice for liking (interest) and efficacy. Item statements are suitable for Likert type grading. Competence expectations are rated on a 7-point Likert type scale ranging from 1 *("I can't")* to 7 *("I can do very well")*. Interests are rated from 1 *("I don't like")* to 7 *("I like very much")*. Mechanical, Nature / Outdoor, Artistic, Helping, High Prestige and Low Prestige are calculated separately according to the responses of interest and competence perception. In addition, as a result of the arithmetic operations performed for the scores obtained from these 10 scales, interest and efficacy perception scores are obtained for RIASEC, People, Things, Data, Ideas, People / Things, Ideas / Data and Prestige scales. The score widths of the scales differ. Realistic, Investigative and Artistic scales are between 4-28, Social, Entrepreneurial and Conventional scales are between 5.33 - 37.33, People, Things, Data and Ideas scales are between 2.61 - 18.3, People / Things, Ideas / Data scales are between -15,684 - 15,684 and Prestige is between -6 – 6 points. Interested readers can access detailed information about the formulas from Özyürek and Vardarlı (2020). As a result, a total of 23 different scale scores are obtained. These 23 scale scores can be calculated as interest measures, competency expectation measures and combined (interest + competence) scores. Validity and reliability studies have revealed that PGI-S properly represents the global structure, and the results do not differ according to gender and culture variables (Holtrop, Born & Vries, 2018; Nagy, 2019; Sverko&Babarovic, 2016; Vardarlı, 2014; Vardarlı, Özyürek, Wilkins-Yel& Tracey, 2017; Zang, Kube, Wang & Tracey, 2013). The calculations related to reliability are explained in the findings section.

The Ten-Item Personality Measure (TIPI). Since Holland (1997) said the interest and personality measurements have similar construct, ten item personality scale was used for similarity tests validity. Therefore, we expect significant relationships between interest and personality measurements. The original of TIPI, based on the five-factor model of personality (for example, Costa & McCrae, 1998) and adapted into Turkish by Atak (2013), was developed by Gosling, Rentfrow, and Swann (2003). TIPI consists of five scales: Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience. Each scale consists of two items. Items contain two descriptive statements separated by commas. For example, "Dependable, self-disciplined". For items, a common root is used like "I also consider myself as ………………… .." The items are rated from 1 (*completely disagree*) to 7 (*completely agree*) on a 7-point scale. While the original of the scale was developed, in the study conducted by Gosling et al. (2003), although the number of items was less, it was found that the average of the test-retest reliability correlation coefficients ($r = 0.72$) obtained approximately six weeks apart was found to be satisfactory. The Cronbach internal consistency coefficients of the two-item scales are 0.40 - 0.73 in width. In terms of validity studies, similar tests (convergent) and discriminate validity of TIPI were examined. The average of correlation coefficients calculated with a similar scale with a higher number of items (for example, 44 items) was found to be high ($r = 0.77$). In terms of correlation values obtained with other scales, the number of items was obtained close to the correlation values obtained for more scales. In addition, it was stated that TIPI was less reliable and showed less strong correlation with other variables when compared to five-factor multi-item measures of personality. As a result, it is stated that researchers who need very short measurements, who do not primarily deal with the subject of personality, and who can tolerate the psychometric properties of very short measurements to a certain extent can use TIPI.

Atak (2013) conducted an adaptation study on TIPI, conducted explanatory and confirmatory factor analyzes and examined the correlations with Five Factor Personality Trait and Adjective-Based Personality Test. After the factor analysis, findings similar to the original scale were obtained and the results were found satisfactory. Most of the correlation values between TIPI and similar scales of other personality measures were found to be around 0.50. The width of the internal consistency coefficients was found between 0.81 and 0.86, and the width of the test-retest correlation coefficients between 0.87 and 0.89. In the current study, these values are in the sample of university students (n = 225). 0.62 for Extraversion, 0.26 for Agreeableness, 0.36 for Conscientiousness, 0.19 for Emotional Stability and 0.26 for Openness to Experiences. As can be seen, the internal consistency coefficients were generally found to be low. One of the reasons for this may be that the number of items in each scale is limited to two.

Procedure

In order to apply the scales to high school and university (associate and undergraduate) students in different provinces, the school psychological counselor residing in these provinces, the administrators of the Turkish Psychological Counseling and Guidance Association Branches in different provinces or lecturers were contacted. Before the application contacted counselors were informed about PGI-S-TR and the application standarts. These counselors or lecturers applied the scales to volunteer students in classroom settings. TIPI was applied only to university students (n = 222). The application took 15 minutes and group application have been done. Necessary permissions were obtained from Publication Ethics Board and from the Ministry of National Education - Turkey in order to conduct the research within ethical limits. Scale usage permissions were obtained from the authors of the scales used in the study.

Data Analysis

Internal consistency and temporal stability values were determined as reliability analyzes. Cronbach's alpha for internal consistency and equal forms (split-half) correlations were calculated as temporal stability measurement. While calculating the Cronbach alpha values of the combined scales (People, Things, Data, Ideas, Social, Entreprising, Conventional, People / Things and Ideas / Data and Prestige) using the formula during the calculation of total scores, a different formula should be used (Li & Weiner, 1998). Because, in the calculation of the internal consistency coefficients of the combined scales, it is necessary to weigh items or scales.

In order to construct the correlation matrices, univariate outliers whose standard scores exceed$\pm$ 3.00 were required to be extracted from high school and university samples (statistics.laerd.com, Tabacknick & Fidel, 2001). As a result of these analyzes, 29 students from the high school sample and 49 students from the university sample were excluded.

The circular structure of the PGI-S-T has been studied using the randomization test of the tried order relationships (Hubert &Arabie, 1987, Tracey, 1997). First of all, the equations related to the order of correlation magnitudes of interest types (eight basic measures of interest with RIASEC) were determined. For example, the RI correlation value is greater than the RA correlation value (RI> RA), or the correlation value of Managing and Business Detail is greater than the Managing and Data Processing correlation value (M and BD> M and DP). In this way, 72 rank predictions according to the RIASEC sextant scales and 288 rank predictions according to the eight slices of interest scales have been selected. The number of procedures validated in this data set is compared with the entire distribution of random repermutations of rows and columns in the correlation matrix. The obtained value is an inferential statistical feature (Vardarlı et al., 2017).

The fit of the model with the data set is determined with the Correspondence Index (CI). CI is a correlation value and the difference between the number of supported and unsupported predictions for calculation is

divided by the total number of predictions. The CI value varies between ± 1, -1 indicates that no predictions are supported, 0 indicates that the number of supported and unsupported procedures are equal, and +1 indicates perfect model fit. For example, when the CI value is .50, this value indicates that 75% of the procedures are supported and 25% are not. Another indicator used to evaluate model fit is the randomization p value. This value measures whether the consistency between the model and the data set is due to chance. For these calculations, the RANDALL program developed by Tracey (1997) was used (Vardarlı et al., 2017).

In order to test the criterion-related validity, the differences in averages by sex and education level (high school-university) for the PGI-S-TR 10 interest scale were examined by two-way multivariate analysis of variance. Before doing this analysis, if there are univariate outliers and multivariate outliers were tested. First, according to boxplots, 114 outliers with univariate were found and excluded from the sample. Eight main scales of interest were accepted as independent variables to determine multivariate outliers and Mahalanobis distance values (p = .001) were found. As a result, 26 multivariate outliers were excluded from the sample. While calculating Pearson's correlations, pairwise selection method was used. Blank instruments were not included to statistics.

RESULTS

Reliability Results

In the reliability analysis for the PGI-S-TR, Cronbach's alpha internal consistency coefficients and equal forms correlations in terms of Interest, Competence and Combined scores were calculated separately for high school and university students. Since the obtained findings are too long, the values in the tables are summarized. Interested readers can look into the relevant tables in Handbook Version 1 (Özyürek&Vardarlı, 2020).

Cronbach's alpha values are .55 and .99 (mean α = .80, Ss = .13, n = 138) and equal forms correlations are .20 and .81 (mean r = .59, Sd = .13, n=138).Cronbach alpha values were found between .33 and .99 width for high school students and between .39 and .99 for university students. Test-half test equal forms correlation values were found between .23 and .78 for high school students and between .20 and .81 for university students. If the reliability findings are expressed as a summary, there are many similarities in terms of these values for high school and university students.

Validity Results

The construct and criterion validity of the PGI-S-TR scales are explained below.

Construct Validity Findings

Whether PGI-S-TR's circular model of RIASEC types of sextant and basic interest measures of eight-slice interest and competence scales fit the database.

(a) The width of the correlation values between the PGI-S-TR subscales is between -.70 and 1.00 (mean r = .33, Ss = .33, n = 3115). Considering the large number of correlation matrices and reliability values of different groups (whole sample, high school-university and female-male) and different variables (interest, efficacy and combined), the matrix and values could not be given in this article. Interested readers can find these matrices in PGI-S-TR Handbook 1st Edition (Özyürek and Vardarlı, 2020). In summary, if the correlations of the measurements closer to the sphere were compared with those at the more distant, the correlations of the closer measurements were also higher.

The randomization test (Hubert &Arabie, 1987) analyzes of the tried order relationships were conducted to evaluate the compatibility of the circular structure of the PGI-S-TR with the data set. For this purpose, firstly, correlation matrices for the interest, competence and combined scores of the RIASEC six-slice and PGI eight-slice scales were calculated. Randomization tests were conducted using these matrices. Correlations calculated for these three different (interest, competence, and combined) scores were calculated separately for both gender and education level (high school and university).

Findings related to randomization tests are shown in Table 1 for RIASEC scales and Table 2 for eight-slice scales. The widths of the combined CI values of interest, competence, and interest + competence for the six-slice model were found between .71 - .97 (p <.02) and for eight-slice scales between .63 - .81 (p <.02). It was found that the CI values calculated for the differences related to whether there is a difference in adjustment for education level and gender were not significant for both RIASEC scales and eight-slice scales.

These findings indicate that the RIASEC six-slice model and the eight-slice model for interest, competence and interest + competence combined scores significantly fit the participants' data. In addition, it was determined that this harmony did not differ according to education level and gender.

Table1. Summarizing the randomization test results according to the hypothesed order relationships of the sextant model

Sextant Scales	Total	High school	University	High school versus university difference	Female	Male	Female versus male difference
Interest							
N	4399	1799	2600		2674	1710	
Predictions made	72	72	72		72	72	
Predictions met	69	69	69		71	64	
P	.017	.017	.017	.40	.017	.017	.03
CI	.94	.93	.92	.01	.97	.78	.10
Competence							
N	4396	1797	2599		2671	1709	
Predictions made	72	72	72		72	72	
Predictions met	64	61	66		61	63	
P	.017	.017	.017	.07	.017	.017	.10
CI	.79	.71	.86	.04	.74	.78	.04
Combined							
N	4221	1717	2504		2557	1655	
Predictions made	72	72	72		72	72	
Predictions met	69	69	69		72	65	
P	.017	.017	.017	.93	.017	.017	.85
CI	.92	.93	.92	-.07	1.00	.82	-.04

Table 2. Summarizing the randomization test results according to the hypothesed order relationships of the octant model

Octant scales	Total	High scholl	University	High school versus university difference	Female	Male	Female versus male difference
Interest							
N	4399	1799	2600		2674	1710	
Predictions made	288	288	288		288	288	
Predictions met	255	257	253		253	255	
P	.0008	.0008	.0008	.32	.0008	.0008	.54
CI	.78	.80	.76	.01	.77	.78	-.00
Competence							
N	4396	1798	2600		2672	1709	
Predictions made	288	288	288		288	288	
Predictions met	242	231	241		242	248	
P	.0004	.0008	.0008	.89	.0004	.0004	.64
CI	.69	.63	.69	-.03	.70	.73	-.01
Combined							
N	4221	1717	2504		2557	1655	
Predictions made	288	288	288		288	288	
Predictions met	251	248	249		259	257	
P	.0008	.0008	.0008	.61	.0004	.0008	.48
UG	.75	.74	.74	-.01	.81	.80	.00

Criterion-related validity findings

(b) In order to validate tests similar to PGI-S-TR scales, the relationships between the Ten-Item Personality Scale (Atak, 2013; Gosling, Rentfrow, & Swann, 2003) were determined and the findings are given in Table 3 and Table 4.

Table 3. Descriptive statistics about TIPS obtained from university students.

TIPS	Mean	Sd
Extraversion	4.92	1.57
Agreeableness	5.38	1.25
Conscientiousness	5.63	1.24
Emotional Stability	4.25	1.40
Openness to Experience	5.30	1.21

n = 223

Table 4. Correlation matrix of TIPS and RIASEC Interest and Competence scales

	Extraversion	Agreeableness	Consientiousness	Emotional Stability	Openness to Experience
Realistic-Interest	-.10	.02	.02	.06	.03
Investigative-Interest	-.06	.01	.07	.00	.13
Artistic-Interest	-.13*	.00	-.14*	-.14*	.11
Social-Interest	.04	.17**	.00	.07	.16*
Enterprising-Interest	.16*	.06	.06	.14**	.22**
Conventional-Interest	.03	.02	.12	.18**	.03
Realistic-Competence	-.03	.06	-.02	.10	.07
Investigative-Competence	-.04	.00	.11	.09	.13*
Artistic-Competence	-.02	.01	-.10	.00	.08
Social-Competence	.17**	.15*	.05	.17**	.15*
Enterprising-Competence	.24**	.02	.05	.20**	.20**
Conventional-Competence	.05	.07	.12	.15*	.03

* $p < .05$, ** $p < .01$.

Correlation coefficients were found to be generally low. It is seen that the Social and Entrepreneurial scales show low correlations with the scales of extraversion, agreeableness, emotional stability and openness to experience. In addition, there is a negative correlation between creative interest scale scores and extraversion, conscientiousness, and emotional stability. Correlations obtained for the investigative and realistic types are largely insignificant. Finally, a positive correlation was obtained between Conventional and emotional stability scales.

(c) After obtaining the findings supporting the six-slice and eight-segment circumplex structure about the construct validity of the PGI-S-TR, it was examined whether there were differences according to gender and education level for criterion-related validity test. Assumption of homogeneity of variences has been tested. However, the findings are not presented here for the avoidance of mental confusion and the prolongation of the findings.For this purpose, each of 10 PGI-S-TR interest scale scores were used as dependent variables and gender and education level were compared. This multivariate analysis of variance was used to control the Type I error. According to the findings obtained, Gender $F (10, 4218) = 184.55$, p <.001, Wilks 'Λ = .696, partial $\eta2$ = .304 and Education Level $F (10, 4218) = 34.70$, p <.001, Wilks' Λ the main effects of Λ = .924, partial $\eta2$ = .076 and Gender x Education Level $F (10, 4218) = 5.10$, p <.001, Wilks' Λ = .988, partial $\eta2$ = .012 were found to be significant. According to the analysis of variance for each scale, 10 comparisons were found to be significant (p <.001) in terms of gender, while only Mechanical (p <.001), Art (p <.001), Helping (p <.001) for the main effect of Education Level.), High Prestige (p <.001) and Low Prestige (p <.001) variables were found to be significantly different. In terms of Gender x Education Level joint effect, only Business Detail (p <.001) and Helping (p <.01) scales differed significantly.

The results of the post hoc (unplanned) comparisons regarding these findings are summarized in Table 5. Ten t-tests in terms of gender main effect, and five different independent groups' t-tests for the main effect of Education Level were conducted. Significant (p <.001) differences were found in the results of all tests.

One-way analysis of variance regarding the common effects was performed first, and the significant difference was found for both Business Detail (p <.001) and Helping (p <.01) variables. Dunnet's C values were calculated due to the fact that the variances were not homogeneous according to the Levene test results (p>.05) in the paired comparisons. Accordingly, the arithmetic mean of High School and University Male students was found to be significantly higher than the arithmetic average of High School and University Female students in terms of Business Detail interest. This time, the opposite situation occurred in terms of aid interest, it was found that the arithmetic mean of High School and University Female students was significantly higher than the arithmetic mean of High School and University Male students. In addition, it was determined that university female students achieved a significantly higher average than female high school students.

Table 5. The results of one-way analysis of variance with the multi-independent samples t test conducted to determine that the PGI-S-T interest scales do not differ according to gender and education levels.

Scales	Gender[a]		Education Level[b]		Gender x Education Level[c]	
	t test	Difference	t test	Difference	Dunnet C	Difference
Social Faciliating	5.65***	F > M				
Managing	-8.53***	F < M				
Business Detail	-13.28***	F < M			-1.66*	FHS<FHS
					-2.60*	KHS<MUniv
					-1.95*	FUniv<MHS
					-2.89*	FUniv<MUniv
Data Processing	-24.02***	F < M				
Mechanical	-25.04***	F < M	3.96***	HS>Univ		
Nature / Outdoor	-5.64***	F < M				
Artistic	8.31***	F > M	-3.29***	HS<Univ		
Helping	18.80***	F > M	-12.66***	HS<Univ	3.84*	FHS>MHS
					-2.02*	FHS<FUniv
					.99*	FHS>MUniv
					5.86*	FUniv>MHS
					3.01*	FUniv>MUniv
High Prestige	4.12***	F>M	-7.45***	HS<Univ		
Low Prestige	-23.59***	F < M	-5.66***	HS<Univ		

Only comparisons with statistically significant differences in the direction of group differences are indicated.

* $p < .05$, ** $p < .01$, *** $p < .001$

asd = 4387, N (female) = 2649; N (male) = 1748

bsd = 4387, N (HS) = 1813; N (Univ) = 2581

csd = 3, 4396, N (FHS) = 1131; N (MHS) = 690; N (FUniv) = 1523; N (MUniv) = 1056

(d) In order to expand the criterion-related validity findings and make it easier for students to benefit from PGI-S-TR scores, the coding of high school and university students was determined. Since there are differences in terms of the width (range) of the scores obtained from the RIASEC scales while determining the coding, the averages of the students in each higher education program are converted into percentage points according to the highest score that can be obtained: Percentage Score = AM x 100 / Highest Score. For example, Percentage Score = 9.85 x 100/28 = 35.18 for the arithmetic mean of the scores obtained from the Realistic scale of the students in the Political Science and Public Administration higher education program. Thus, comparisons between arithmetic means were made and coding was determined according to the first three letters (type) according to the highest arithmetic mean in the sample of each program.

In Table 6, three letter encodings are given according to higher education programs, academic high school types and field types. Since there are differences in terms of the width (range) of the scores obtained from the RIASEC scales while determining the coding, the averages of the students in each higher education program are converted into percentage points according to the highest score that can be obtained: Percentage Score = AM x 100 / Highest Score. For example, Percentage Score = 9.85 x 100/28 = 35.18 for the arithmetic mean of the scores obtained from the Realistic scale of the students in the Political Science and Public Administration higher education program. Thus, comparisons between arithmetic means were made and the first three codes were determined according to the highest arithmetic mean in the sample of each program.

In terms of the simplicity of the findings, these codings are given only for higher education programs (excluding medical faculties) with a sample size of 50 or more. Also, in order not to increase the number of tables, only coding was given for the measurements of interest, and codes for competence and combined measurements were not included. All findings on coding can be accessed from Özyürek and Vardarlı (2020).

When Table 6 is analyzed in terms of coding, students in engineering departments whose duties are carried out in open air (environment and construction) R and I; health-related (Nutrition and Dietetics, Nursing, Medicine) programs students A, I and S; A and S of students in programs related to publicity and literature (Public Relations and Publicity, English Language and Literature, English Language Teaching) A and S; students in programs related to social fields (Theology, Psychological Counseling and Guidance, Social Services) A, S, I and E; programs related to numerical calculations (Econometrics and Economics) are more suitable for E, S and C types. Since the History department is considered as a basic science field, it can also be considered among the programs with I coding. However, students who are also suitable for social areas in terms of their features can be found in this program. As a matter of fact, a significant portion of the students who graduated from History departments may have preferred to be teachers rather than scientists.

In terms of academic high school types and field types, students are more suitable for the I and A types as long as they choose the science high school, Anatolian high school and science-mathematics score type, and they may have properties more suitable for the S, A and E types when they choose the project schools and other score types.

Table 6. Codifications according to the percentages of the arithmetic mean of the scores obtained from each RIASEC interest scale of the samples in a particular higher education program.

Higher Education Programs	n	Arithmetic Mean						Code*
		R	I	A	S	E	C	
Environmental Engineering	75	54.79	51.6	50.23	54.42	54.02	50.34	RSE
Civil Engineering	179	58.70	58.00	55.51	52.57	54.37	50.40	RIA
Mechanical Engineering	87	59.20	59.24	58.21	56.84	58.14	54.83	IRC
Computer Engineering	50	38.50	52.79	54.55	50.95	49.72	48.29	AIS
Industrial Engineering	64	43.74	51.62	51.32	53.25	57.78	51.19	ESI
Nutrition and Dietetics	93	30.76	61.17	65.46	60.72	55.02	38.47	AIS
Nursing	71	43.76	57.99	59.08	56.01	50.54	45.39	AIS
Medicine	49	39.36	56.71	61.95	63.71	56.16	44.94	SA<u>IE</u>
Public Relations and Publicity	102	32.31	42.03	52.82	57.27	54.86	39.48	SEA
English Language and Literature	53	33.05	55.91	64.68	61.02	52.63	34.58	ASI
English Language Teaching	70	30.78	51.38	64.89	58.61	49.8	35.89	ASI
Theology	75	33.77	52.61	55.08	64.36	51.20	34.40	SAI
Psychological Counseling and Guidance	281	28.12	50.74	61.34	59.49	50.00	34.88	ASI
Social Services	56	35.46	51.47	58.23	63.56	52.75	39.42	SAE
History	64	32.81	50.78	59.71	60.72	49.52	37.14	SAI
Econometrics	95	36.20	50.26	55.73	63.16	64.42	59.48	ESC
Econo	57	31.71	43.04	52.59	56.46	57.77	53.18	ESC
Academic high school types								
Anatolian High Schools	1289	40.54	55.48	57.51	53.73	52.92	42.93	AIS
Science high schools	84	38.49	61.19	58.82	47.79	48.98	41.21	IAE
Project Schools	94	36.25	49.65	59.75	59.94	54.17	39.63	SAE
Types of fields								
Science and mathematics	1047	42.96	58.82	57.57	52.93	52.29	44.52	IAS
Turkish-mathematics	481	38.86	47.21	57.18	59.39	57.14	41.82	SAE
Turkish-social	167	39.82	47.32	55.82	58.83	56.23	39.71	SEA
Foreign language	88	32.54	52.64	65.68	57.31	50.63	35.36	ASI

DISCUSSION

In this study, validity and reliability studies were conducted for the PGI-S-TR. Cronbach's alpha internal consistency coefficients of the scales were found to be sufficient as in Vardarlı's (2014) Izmir sample. Equal forms correlations were found to be low in the Prestige scale, and these values were found to be higher in terms of the Combined scale scores. In terms of structural validity, it was found that the scales were compatible with the global structure, and low correlation values were obtained with personality measurements made with TIPI (Atak, 2013). In terms of criterion-related validity, common effects were found in accordance with the expectations of gender and education level.

(a) The global structure of the PGI-S-TR was examined using the randomization test of the tested rank relationships (Hubert &Arabie, 1987). As a result of the calculations made using the RANDALL program developed by Tracey (1997), it was found that the correlations of the measurements at the near location on the sphere were higher than the ones at the far position. Results; The RIASEC six-slice and eight-slice models for interest, competence, and interest + competence combined scores indicate that the participants' data significantly fit.

In addition, it was determined that the difference tests related to the fit of the hexagonal and circular model did not show a significant difference according to both education level and gender, in other words, the model fit showed invariance. On the other hand, it is known that there are many research findings proving that there are differences between women and men in terms of professional preferences (Darcy, 2005; Etzel, Nagy & Tracey, 2016). The invariance in the difference tests of the structures related to the models should not be confused with the gender differences in occupational choices. Structural invariance findings prove that the proximity of the measurements of interest on the circle and the size or smallness of the correlation values is compatible with each other. For example, the hypotheses about model fit can be considered as follows: In the hexagonal model, R types are located close to I and C types and far from S types. Therefore, the correlation values of R and I or R and C measurements should be found higher than the correlation values of R and S measurements. Gender differences in preferences for professional activities are, for example, gender role socialization, educational and occupational opportunities, perceived talent differences, etc. (Anderson, Tracey, & Rounds, 1997).

It is seen that these results obtained are consistent with the researches of PGI and PGI-S with different cultures (Darcy, 2005; Long, Adams & Tracey, 2005; Long et al., 2006; Hedrih, 2008; Sverko, 2008; Wilkins, Ramkinssoon& Tracey, 2013; Zhang et al., 2013; Etzel, Nagy & Tracey, 2016; Atitsgobe et al., 2018; Tracey & Tao, 2018; Etzel & Nagy, 2019). Thus, the global and hexagon patterns would seem to be supported in Turkey

(b) In order to test the validity of similar tests of the PGI-S-TR, the correlations between the Ten-item Personality Scale (Atak, 2013; Gosling, Rentfrow, & Swann, 2003) and the subscales of the PGI-S-TR were examined. The correlation values obtained are low. As stated by Holland (1997), these findings support the idea that RIASEC measures are a structure different from personality measurements and support the idea of construct validity of PGI-S-TR.

(c) For criterion-related validity testing, it was examined whether there were differences according to gender and education level. All the comparisons obtained in terms of gender were found to be significant. It is seen that this result is parallel with the studies (for example, Darcy, 2005; Etzel, Nagy & Tracey, 2016) in which the validity of the PGI was tested. Similar findings were obtained in studies in which PGI-S was adapted to different cultures (Holtrop, Born &Vries, 2018). While all the comparisons were found to be significant in terms of gender, significant differences (p <.001) were found for the main effect of Education Level (high school and university) only in terms of Mechanical, Art, Helping, High Prestige and Low Prestige variables. It was determined that university female students achieved a significantly higher average than female high

school students. It is thought that this situation may be related to the differences in the professional interest levels of the students participating in the study, depending on the education level. Significant differences were found only for Business Detail ($p < .001$) and Helping ($p < .01$) scales in terms of Gender x Education Level joint effect. In studies examining the structure of PGI-S in different cultures, it was found that women got high scores from the People subscales (Social Facilitation, Helping, Managing, Artistic), while the men from the Things subscales (Business Detail, Data Processing, Mechanical, Nature / Outdoor) got high scores. (Darcy, 2005; Hedrih, 2008; Long, Adams, Tracey, 2002; Tracey, 2005; Sverko, 2007; Zhang et al.2013, Etzel, Nagy & Tracey, 2016; Vardarlı et al., 2016). The differentiation of professional interests based on gender that emerged in this study overlaps with the results obtained by researchers in different countries.

 (d) In order to expand the criterion-related validity findings, the coding of high school and university students were determined. Kuzgun (1990) stated that schools look for certain personality traits associated with the programs they apply in their students and these characteristics of students are reinforced in the school environment during their education. Accordingly, it is expected that the scores of students obtained from PGI-S-TR will differ according to the type of department / high school they study. It is seen that the three letter codes determined in this research are in the expected way. For example, students in engineering departments R and I; health-related programs students A, I and S; A and S of the students in publicty and literature related programs; A, S, I and E of the students in programs related to social fields; It has been determined that programs related to numerical calculations are more suitable for E, S and C types. In terms of academic high school types and field types, students get higher scores in I and A types as long as they choose the science high school, Anatolian high school and science-math score type, while project school students get higher scores in S, A and E types. It is seen that the findings obtained are similar to the study of Vardarlı (2014). PGI has been developed in the United States, where industry and technology are more advanced. Therefore, according to the culture of this country, its areas of interest are also more detailed. For example, interests such as Data Processing and Social Facilitation may perceived very detailed by Turkish students. Gender roles may have an effect on making interests such as Social Facilitating and Helping are more appropriate for women and Managing and Helping are more suitable for men.

LIMITATIONS AND RECOMMENDATIONS

A drawback of this study is that the coefficients obtained regarding temporal stability could not be determined by applying the scales twice. This deficiency must be corrected as soon as possible. In addition, making adequate comparisons according to the characteristics of the students is another important issue. In order to expand the criterion-related validity findings, it is necessary to make comparisons according to the types of high schools, types of scores, types of departments in vocational high schools and the characteristics of higher education programs.

The number of samples in which analyzes are performed or three-letter coding is determined are relatively small. Therefore, especially practitioners should pay attention to this and be flexible in these coding when discussing with counselees about codings.

The number or variety of higher education programs is small in this article. Also, the coding of the fields / branches in vocational and technical Anatolian high schools could not be determined due to the insufficient number of participants. Psychological counselors can make predictions by using the similarities when the counselees want other higher education programs or vocational high school fields. It will be especially useful to pay attention to the similarities in the content of the trainings.

Conclusion

As a result, PGI-S-TR is thought to generate beneficial results when administered to high school and college students in Turkey general. Findings supporting the implementation of the inventory by psychological counselors both in schools and in other career guidance settings were obtained.

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Genişletilmiş Özet

Giriş: Bu çalışmada KKE-K-TR'nin ilave geçerlik ve güvenirlik çalışmaları yapılmıştır. Güvenirlik açısından iç tutarlılık ve zamansal kararlılık (eşit formlar korelasyonları) değerleri belirlenmiştir. Geçerlik açısından ise(a) KKE-KF-TR'nin küresel yapısının örneklem verisine uygunluk gösterip göstermediği (b) benzer testler geçerliği kapsamında, On Maddeli Kişilik Ölçeği (Atak, 2013; Gosling, Rentfrow, &Swann, 2003) ile ilişkiler, (c) cinsiyet ve eğitim düzeylerine (lise ve üniversite) göre ölçek aritmetik ortalamaları arasında anlamlı farklılıkların olduğunu belirlemek ve (ç) ölçüt bağıntılı geçerlik bulgularının genişletilmesi ve öğrencilerin KKE-K-TR puanlarından yararlanmalarını kolaylaştırmak amacıyla liseli ve üniversiteli öğrencilerin üç harfli kodlamaları belirlemek amaçlanmıştır. Araştırmada aynı zamanda KKE-K-TR'nin ulusal standardizasyon çalışması da yapıldığı için (T puanlarının belirlenmesi gibi) Türkçeye yeni bir ilgi envanteri kazandırılması söz konusu olmuştur.

Yöntem: Uygun örnekleme yönteminin kullanıldığı araştırma örneklemini 1932 (K = 1189, E = 733, 10 öğrenci cinsiyetini belirtmemiş) lise, 2767 (K = 1619, E = 1108, 40 öğrenci cinsiyetini belirtmemiş) üniversite öğrencisi oluşturmuştur. Yaş ortalama ve standart sapmaları lise örnekleminin AO = 16.74, Ss = 1.11 (genişlik, 14-21), üniversite örnekleminin ise AO = 21.95, Ss = 2.18 (genişlik, 17-45) şeklindedir.

Veri toplama araçları olarak Kişisel Küre Envanteri – Kısa Form – Türkçe (KKE-K-TR) ile On Maddeli Kişilik Ölçeği (OMKÖ) kullanılmıştır.

Ölçeklerin farklı illerdeki lise ve üniversite (ön lisans ve lisans) öğrencilerine uygulanması amacıyla, bu illerde ikamet eden okul psikolojik danışmanı, Türk PDR Derneği'nin farklı illerdeki yöneticileri ya da öğretim elemanları ile iletişime geçilmiştir. Bu psikolojik danışman ya da öğretim elemanları ölçekleri sınıf ortamlarında gönüllü öğrencilere uygulamışlardır. OMKÖ sadece üniversite öğrencilerine uygulanmıştır (n = 222).

Verilerin analizi olarak, iç tutarlık analizleri, korelasyon analizleri randomizasyon sınaması ve iki yönlü çok değişkenli varyans analizleri yapılmıştır.

Bulgular: Güvenirlik bulguları: Cronbach alfa değerleri genişliği .55 ve .99 (ortalama α = .80, Ss = .13, n = 138) arasında ve eşit formlar korelasyonları ise .20 ve .81 (ortalama r = .59, Ss = .13, n = 138) arasında bulunmuştur. Cronbach alfa değerleri liseli ve üniversiteli öğrenciler için de yine .55-.99 genişliği arasında bulunmuştur. Test-yarı test eşit formlar korelasyon değerleri liseli öğrenciler için .23-.78 arasında ve üniversiteli öğrenciler için .20-.81 arasında bulunmuştur. Güvenirlik bulguları özet olacak şekilde ifade edilirse, lise ve üniversiteli öğrencilerin iç tutarlık katsayıları benzer bulunmuştur.

Geçerlik bulguları – yapı geçerliği: (a) KKE-K-TR altölçekleri arasındaki korelasyon değerlerinin genişliği -.70 ve 1.00 (ortalama r = .33, Ss = .33, n = 3115) arasında bulunmaktadır. Farklı grupların (tüm örneklem, lise-üniversite ve kadın-erkek) ve farklı değişkenlerin (ilgi, yeterlik ve birleştirilmiş) korelasyon matrisleri ve güvenirlik değerlerinin çok sayıda olması nedeniyle, matris ve değerler bu makalede verilememiştir.

Randomizasyon sınamaları ile ilgili bulgular RAYSGD ölçekleri için Tablo 1'de ve sekiz dilimli ölçekler için de Tablo 2'de gösterilmektedir. Altı dilimli model için ilgi, yeterlik ve ilgi + yeterlik birleştirilmiş UG değerlerinin genişlikleri .71 - .97 (p < .02) arasında ve sekiz dilimli ölçekler için .63 - .81 (p < .02) arasında bulunmuştur. Eğitim düzeyi ve cinsiyet için uyumda farklılık olup olmadığı

ile ilgili farklılıklar için hesaplanan UG değerlerinin hem RAYSGD ölçekleri hem de sekiz dilimli ölçekler için anlamlı olmadığı bulunmuştur.

Bu bulgular, ilgi, yeterlik ve ilgi + yeterlik birleştirilmiş puanları için RAYSGD altı dilimli modelin ve sekiz dilimli modelin katılımcıların verilerine anlamlı biçimde uyum gösterdiğine işaret etmektedir. Ayrıca, bu uyumun eğitim düzeyi ve cinsiyete göre farklılık göstermediği belirlenmiştir.

Geçerlik bulguları – ölçüt bağıntılı geçerlik: Tablo 4'te belirtilen korelasyon katsayılarının genel olarak düşük olduğu bulunmuştur. Sosyal ve Girişimci ölçeklerin dışadönük, yumuşak başlılık, duygusal dengelilik ve yaşantıya açık olma ölçekleriyle düşük düzeyde korelasyon gösterdikleri görülmektedir. Ayrıca, Yaratıcı ilgi ölçeği puanları ile dışadönüklük, sorumluluk ve duygusal dengelilik arasında negatif korelasyon oluğu görülmektedir. Araştırmacı ve Realistik tiplere yönelik elde edilen korelasyonlar büyük oranda anlamlı değildir. Son olarak, Düzenli tip ölçekleri ile duygusal dengelilik arasında pozitif korelasyon elde edilmiştir.

(c)Ölçüt bağıntılı geçerlik sınaması için cinsiyet ve eğitim düzeyine göre farklılıkların olup olmadığı incelenmiştir. Bu amaçla 10 KKE-K-TR ilgi ölçeği puanının her biri bağımlı değişken olarak kullanılmış ve cinsiyet ile eğitim düzeyi karşılaştırılması yapılmıştır. Bu bulgular Tablo 5'de belirtilmektedir. Bulgulara göre anlamlı ana ve ortak etkiler elde edilmiştir.

(ç) Ölçüt bağıntılı geçerlik bulgularının genişletilmesi ve öğrencilerin KKE-K-TR puanlarından yararlanmalarını kolaylaştırmak amacıyla liseli ve üniversiteli öğrencilerin kodlamaları belirlenmiştir. Kodlamalar belirlenirken RAYSGD ölçeklerinden alınan puanların genişlikleri (range) bakımından farklılıklar olduğu için her bir yükseköğretim programındaki öğrencilerin ortalamaları, alınabilecek en yüksek puana göre yüzdelik puanlara çevrilmiştir: Yüzdelik Puan = AO x 100 / En Yüksek Puan. Örneğin, Siyaset Bilimi ve Kamu Yönetimi yükseköğretim programındaki öğrencilerin Realistik ölçeğinden aldıkları puanların aritmetik ortalaması için Yüzdelik Puan = 9.85 x 100 / 28 = 35.18. Böylece, aritmetik ortalamalar arasında karşılaştırmalar yapılabilmiş ve her bir programın örneklemindeki en yüksek aritmetik ortalamaya göre ilk üç harfe (tipe) göre kodlamalar belirlenmiştir. Tablo 6'da bu kodlamalar görülebilir.

Tartışma ve Sonuç: Bu araştırmada KKE-KF-TR için geçerlik ve güvenirlik çalışmaları yapılmıştır. Ölçeklerin Cronbach alfa iç tutarlılık katsayıları Vardarlı'nın (2014) İzmir örneklemindeki gibi yeterli düzeyde bulunmuştur. Eşit formlar korelasyonları ise Saygınlık ölçeğinde düşük bulunmuş, birleştirilmiş ölçek puanları bakımından bu değerlerin yükseldiği belirlenmiştir. Yapısal geçerlik bakımından ölçeklerin küresel yapıya uygun olduğu, OMKÖ (Atak, 2013) ile yapılan kişilikölçümleri ile düşük korelasyon değerleri elde edildiği bulunmuştur. Ölçüt bağıntılı geçerlik açısından beklentilere uygun düşen cinsiyet ve eğitim düzeyi ortak etkileri bulunmuştur.

Bu araştırmanın eksik bir yanı zamansal kararlılıkla ilgili elde edilen katsayıların ölçeklerin iki defa uygulanması ile saptanamamış olmasıdır. Bundan sonra yürütülecek çalışmalarda kararlılık ölçümlerinin alınması uygun olacaktır. Bu eksikliğin en kısa zamanda giderilmesi gereklidir. Ayrıca, öğrencilerin özelliklerine göre yeterli karşılaştırmaların yapılması da önemli diğer bir konudur. Ölçüt bağıntılı geçerlik bulgularının genişletilmesi için lise türlerine, puan türlerine, meslek liselerindeki bölüm türlerine ve yükseköğretim programlarının özelliklerine göre karşılaştırmaların yapılması gereklidir.

Analizlerin yapıldığı ya da üç harfli kodlamaların belirlendiği örneklemlerin sayıları nispeten azdır. Bu nedenle, özellikle uygulamacılar buna dikkat etmeli, danışanlarla kodlamalar hakkında tartışırken bu kodlamalarda esnek olmalıdırlar.

Sonuç olarak, KKE-KF-TR'nin Türkiye genelindeki liseli ve üniversiteli öğrencilere uygulanmasının yararlı sonuçlar sağlayacağı düşünülmüştür. Envanterin bundan sonraki yıllarda psikolojik danışmanlar tarafından hem okullarda hem de diğer kariyer psikolojik danışma hizmetlerinin verildiği ortamlarda uygulanmasını destekleyen bulgular elde edilmiştir.

Yazarlar Hakkında

Ragıp Özyürek. Prof. Dr., İstanbul Aydın Üniversitesi, Eğitim Fakültesi, Rehberlik ve Psikolojik Danışma ABD. Beşyol İnönü Cd. No:38 Küçükçekmece-İSTANBUL. r.ozyurek@gmail.com, ragipozyurek@aydin.edu.tr

Ragıp Özyürek. Prof. Dr. İstanbul Aydın University, Departmant of Psychological Counseling and Guidance. r.ozyurek@gmail.com, ragipozyurek@aydin.edu.tr

Bade Vardarlı. Dr., VR Çocuk Bilişim Teknoloji ve Danışmanlık Ltd. Şti. Prof. Dr. Yusuf Vardar Sk. No:8/2 Karşıyaka-İZMİR. badevardarli@hotmail.com

Bade Vardarlı. Dr. VR Çocuk IT and Counseling Limited Company. badevardarli@hotmail.com

Terence J. G. Tracey. Prof. Dr., British Columbia Üniversitesi, Psikolojik Danışma ABD. 272A Scarfe Building, 2125 Main Mall Vancouver CANADA. Terence.Tracey@ubc.ca, Terence.Tracey@asu.edu

Terence J. G. Tracey. Prof. Dr., British University, Psychology Department. Terence.Tracey@ubc.ca, Terence.Tracey@asu.edu

Çıkar Çatışması

Fonlama

Not

Etik Bildirim

This research was completed in line with the Helsinki Declaration. In line with this, the study was investigated and permitted by AAA University Scientific Research and Ethical Review Board. Additionally, data tools in the study were only distributed to volunteer participants. All participants provided informed consent. Additionally, participants were informed that they could withdraw from the study at any time during data collection.

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ORCID

Ragıp Özyürek, http://orcid.org/0000-0002-7394-1325

Bade Vardarlı, http://orcid.org/ 0000-0003-1047-0885

Terence J. G. Tracey, http://orcid.org/ 0000-0003-4376-6738